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SEA DRAGON

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Navy and Marine Corps leaders recognize that the strategic environment will undergo significant changes as we move into the 21st century. In preparation for these changes, the Navy is exploring new command and control relationships, and the Marine Corps established Sea Dragon to experiment with emerging technologies, operational concepts, and new organizational structures. The objective of these innovative efforts is to create synergy through the development of a command and control doctrine that efficiently utilizes all of the assets of the Naval Expeditionary Task Force (NETF), and the development of new tactics, techniques and procedures for the employment of the Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)). This paper will explore the potential employment of MEU(SOC)s, as envisioned in Sea Dragon, under the proposed command and control structure for NETFs. To gain an appreciation for the significance of these undertakings, this paper will discuss the Navy and Marine Corps? vision of the future strategic environment, provide a historical perspective of the development of previous doctrine and tactics, outline the initiatives of the Sea Dragon concept, and describe the proposed command and control relationships within the NETF. Finally, this paper will suggest Sea Dragon MEU(SOC) employment in seven different MEU(SOC) missions, in the context of the new NETF command and control framework.

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Preface

Following his appointment as Commandant of the Marine Corps, General Krulak directed the activation of the Warfighting Laboratory in Quantico, VA. The Commandant's Warfighting Laboratory (CWL) was tasked with initiating the experimentation of tactical and operational concepts developed under Sea Dragon. He also directed the CWL to seek out and experiment with existing and emerging technologies that would support advanced operational concepts. Sea Dragon is a philosophy of advanced operational concepts and advanced technology that seeks to garner the advantages of each and to combine them in order to enhance effectiveness in future operations.

The Marine Corps' efforts to experiment with operational concepts and harness advancements in technology will sustain the Corps in the future and ensure that it remains relevant and ready. Combined with the Naval Expeditionary Task Force, the Navy-Marine Corps Team will continue to be a credible force as we move into the next century.

This research team would like to thank our research advisor, LtCol Mark S. Barnhart, USMC, ACSC (CAM), for his guidance and support during the research and writing of this paper. Additionally, we thank CDR Ron Henderson, USN, Deputy of Experimental Technology Actions Division, CWL, for providing materials and information that were vital to our research, and CDR Kessler, USN, of the Naval Doctrine Command for his guidance and insights on the development of the Naval Expeditionary Task Force. We

would also like to thank Maj S. Fontaine, USMC, 7th Engineer Support Battalion, for providing information regarding Combat Service Support Enterprise.

Abstract

Navy and Marine Corps leaders recognize that the strategic environment will undergo significant changes as we move into the 21st century. In preparation for these changes, the Navy is exploring new command and control relationships, and the Marine Corps established Sea Dragon to experiment with emerging technologies, operational concepts, and new organizational structures. The objective of these innovative efforts is to create synergy through the development of a command and control doctrine that efficiently utilizes all of the assets of the Naval Expeditionary Task Force (NETF), and the development of new tactics, techniques and procedures for the employment of the Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)). This paper will explore the potential employment of MEU(SOC)s, as envisioned in Sea Dragon, under the proposed command and control structure for NETFs. To gain an appreciation for the significance of these undertakings, this paper will discuss the Navy and Marine Corps' vision of the future strategic environment, provide a historical perspective of the development of previous doctrine and tactics, outline the initiatives of the Sea Dragon concept, and describe the proposed command and control relationships within the NETF. Finally, this paper will suggest Sea Dragon MEU(SOC) employment in seven different MEU(SOC) missions, in the context of the new NETF command and control framework.

Chapter 1

Sea Dragon And NETF Integration

In October 1995, Commandant of the Marine Corps General Charles C. Krulak established the Commandant's Warfighting Laboratory (CWL) to experiment with existing and emerging technologies and advanced operational concepts. Innovations from the CWL will drive the Marine Corps Combat Development Command's (MCCDC) efforts in preparing for operations into the 21st century. Realizing that sea-based forces provide the nation with the strategic advantages of mobility, survivability, and sustainability, MCCDC is working with its counterparts at the Naval Doctrine Command to ensure that Carrier Battle Groups (CVBGs), Amphibious Ready Groups (ARGs) and Marine Air Ground Task Forces (MAGTFs), known as Naval Expeditionary Task Forces (NETFs), are organized, trained, and equipped to accomplish missions demanded by the changing world order.

To meet the anticipated missions of the 21st century, the CWL established Sea Dragon to develop, test, and evaluate new technologies, organizational structures, and operational concepts. Sea Dragon is a stepping stone to achieve the force that the Marine Corps will field in the 21st century. "Forward...From The Sea" (FFTS) and "Operational Maneuver From The Sea" (OMFTS) outline the types of naval forces and the operational concepts that will be required to meet the objectives derived from the "National Security

Strategy for Engagement and Enlargement" and the "National Military Strategy." To achieve the objectives of the future will require Navy and Marine Corps elements to doctrinally unify their efforts like never before. Sea Dragon will have a significant impact on the direction that the Navy and Marine Corps will take. In the face of evolving doctrine, this paper will address the potential command and control relationships of NETF elements in the performance of Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)) missions, in light of the concepts currently being explored by Sea Dragon**.**

Forward…From The Sea

The Navy's strategic vision of the post-Cold War era is incorporated in 1994 document "Forward…From The Sea." As a result of the changing strategic environment, it recognizes that priorities must be shifted from dominance of the open sea to power projection and operations in the world's littorals.[1] However, strategic deterrence, sea control and maritime supremacy, and strategic lift remain a vital part of Naval Expeditionary Task Force operations.[2]

Although Navy and Marine Corps operations are not considered joint operations, warfighting across the entire spectrum of conflict will be multi-service. Working together, the Navy and the Marine Corps are developing doctrine to enhance the unique capabilities that forward deployed, sea-based assets provide to the regional CINCs. Evolving doctrine is focused on the operational linkages of command and control that will streamline the transition from crisis to conflict. In other words, the tip of the spear is being reforged through a commitment to fully integrate the actions of each element of the NETF.

Naval forces are a responsive, tailorable instrument of power, ideally suited for missions ranging from peacetime operations through crisis and conflict to resolution. Tailoring provides a variety of options, for example, it enables the commander to economically alter the capabilities of his forces in order to accomplish the mission. Naval forces are shaped for joint operations and play a key role in fostering relations with allies through multinational exercises and combined operations. FFTS represents a commitment to developing a forward deployed, expeditionary force that is capable of contributing to national security strategy across the full range of military operations.

Operational Maneuver From The Sea

General Krulak describes "Operational Maneuver From The Sea" as a concept that builds upon the Navy's vision in "Forward...From The Sea".[3] Where the littoral may be defined as the area where the sea meets the coast, OMFTS seeks to create a single environment that unites the actions of land, sea and air forces to accomplish the mission. It can be considered the marriage of maneuver warfare and naval warfare. OMFTS provides a framework for the Marine Corps to carry maneuver warfare to the next higher level. By taking advantage of technological innovation and utilizing the sea for tactical maneuver rather than movement, Navy and Marine forces will maintain a decisive edge in meeting the challenges of an uncertain future.

In a world where technological innovation will provide opportunities for the U.S., these innovations will also be available to our enemies. OMFTS is based upon the premise that the future will be characterized by uncertainty, challenge, and a breakdown of order. Fragmentation within the state system is eroding the power of state governments, and

violence is increasingly being perpetrated by non-traditional forces. Non-state actors will also benefit from the increased lethality and precision of conventional weapons; and the proliferation of weapons of mass destruction will continue to rise. War in the future will be conducted across an ever-widening spectrum of possibilities.

OMFTS recognizes that new attitudes, skills, techniques and equipment will be required for naval forces to fight and win in the future. Although new techniques and equipment may be technology driven, the attitudes and skills required of Navy and Marine forces must be centered on innovation, improvisation, and the ability to adapt. Commanders must be proficient at making decisions in an environment of uncertainty and ambiguity. OMFTS will require naval forces to use the sea as a medium for maneuver. Freedom to maneuver must provide an advantage to U.S. forces while creating a disadvantage for the enemy. It calls for increased emphasis on sea-based logistics and fire support. Smaller, more powerful forces will not be tethered to shorebased lodgments, allowing for a higher tempo of operations.

"Operational Maneuver From The Sea will couple doctrine with technological advances in speed, mobility, fire support, communications, and navigation to seamlessly and rapidly identify and exploit enemy weaknesses across the entire spectrum of conflict."[4] In the broadest sense, OMFTS establishes the direction in which Marine Corps must advance in its preparations for the 21st century. Enhanced integration of Naval Expeditionary Task Force elements, new forcible entry operations, and expanded maritime maneuver are areas that must be improved. Increased operational capabilities, along with the intellectual base and a common vision to employ those capabilities, will be necessary to retain an advantage as the strategic environment evolves.

Sea Dragon is the vehicle that will enable the Marine Corps to experiment with current and emerging technologies, new organizational structures, and operational concepts. It is an impetus for innovation, one that will challenge Marines to seek new ways to realize the vision of OMFTS. This leap in the evolution of warfighting will undergo serious debate and rigorous evaluation in its effort to create a force that will remain prepared to meet future challenges. OMFTS will guide that effort as the overarching concept for maneuver warfare in the world's littorals.

The fundamental precepts of Sea Dragon are not new to the Marine Corps. Marines have a history that is replete with examples of creating opportunity from failure. A systematic approach of experimenting with bold ideas, coupled with an ethos for thinking beyond the conventional wisdom, has kept the Marine Corps at the forefront of innovation. The approach that the CWL is taking with Sea Dragon bears a significant resemblance to the manner in which amphibious warfare was developed earlier in this century.

Relationship with the Past

It is by no accident that the CWL's mission is reminiscent of the Marine Corps past. In 1921, the new Commandant of the Marine Corps, Major General Commandant John A. Lejeune was determined to develop a new mission for the Marine Corps. A successor to the Advanced Base Force of the early 1900s, the newly structured Expeditionary Force would become the organization that would provide the Navy with a rapidly deployable landing force.[5] Inherent in this mission would be the requirement to conduct offensive landing operations against a hostile force. Although this idea faced scrutiny from both the

Army and congress, citing Great Britain's failed landing at Galipoli in 1915, General Lejeune set the course for the development of amphibious doctrine that would later prove essential for the island campaign in the Pacific during WWII.

From the turn of the century to WWI, Marine Corps operations were focused in Cuba, Panama, Haiti, Nicaragua and the Dominican Republic. Although fighting could be intense, the smaller scope of these operations left the Marine Corps ill-prepared for the large scale land operations encountered during WWI. Following the war, the Marine Corps had little to distinguish itself from any other land army. With no formal doctrine of its own, the Marine Corps relied upon doctrine oriented to the large-scale land campaign that was developed at the Army War College.[6] This was ill-suited for the amphibious operations envisioned by General Lejeune.

In 1921, the two brigades that comprised the Expeditionary Force, stationed at Marine Corps Base Quantico, VA, became the specimens for the development of amphibious doctrine. Under the direction of the Division of Operations and Training and the Marine Corps Schools, the Expeditionary Force was used to test the validity of emerging ideas. From 1921 through 1924, the Expeditionary Force conducted annual maneuvers to experiment with concepts that were developed at the Marine Corps Schools and the Division for Operations and Training. These maneuvers were conducted at various Civil War battlefields in the area, where simulated amphibious landings allowed the students and senior officers to gain valuable insights into the problems associated with offensive operations from the sea against an opposing enemy force.

In addition to the ground maneuvers, Marines also practiced embarking and debarking from Navy ships. In 1922 the Marine Corps held its first large scale amphibious

experiment, known as a Fleet Exercise, by offloading men and equipment in Culebra. By 1924, amphibious landings were conducted at Culebra and Panama. While the exercise in Panama was unopposed, in Culebra, the landing Marine regiment was faced with an aggressor regiment that successfully defended the beach. The assault was considered an unmitigated failure, yet many valuable lessons were learned from the things that went wrong.[7] Undeterred by this failure, the officers would return to school to apply those lessons in developing new approaches to successfully accomplish amphibious landings.

In 1925 the Marine Corps participated in Joint Army and Navy Problem 3 which simulated a two division size force in an opposed landing on the island of Oahu. The Marine force was comprised of infantry, tanks, artillery, engineers, aircraft and supporting equipment. The exercise pitted the Marine landing force against a defending Army division. While the Marines were able to establish a beach head on the island, problems endured and amphibious tactics would require further development. After an assessment of the exercise, a recommendation to establish a separate unit to experiment with emerging doctrinal concepts was put forth.

As Marines began to refine their theories, it became apparent that the Army's doctrine of land warfare was not ideally suited to the unique requirements of amphibious operations. In 1927, the Marine Corps was given the responsibility for providing landing forces to the fleet by the Joint Board of the Army and Navy.[8] This unique requirement cemented the shift from the defense of advanced naval bases to offensive amphibious operations. It was at this time that the officers at the Marine Corps Schools began to be receive instruction oriented to the Marine Corps' newly formalized amphibious mission.

In 1927 a training battalion was formed to allow the students from the Marine Corps Schools to experiment with amphibious concepts. The battalion supported landing plans that were developed by the students. Historical landings were reexamined for lessons learned. In 1932, Joint Army and Navy exercises were held again with many of the mistakes from previous exercises being repeated. A lack of coordination within the different elements of the landing force, and between the Marine Corps and the Navy, exemplified the requirement for a unifying doctrine tailored to the Marine mission. Further scrutiny of historical amphibious operations, coupled with exhaustive staff work, resulted in the *Tentative Manual for Landing Operations*.[9] From 1934 to 1941, Marines attending the Marine Corps Schools used this manual for classroom instruction and fleet exercises. This new doctrine was repeatedly tested and evaluated to the point where it formed the foundation for the procedures that were successful in the Pacific Campaign of WWII.

The Success of Amphibious Doctrine

Many of the basic principles outlined in the *Tentative Manual for Landing Operations* remain relevant today. The capabilities of modern equipment may have changed the tactics, but the fundamental concepts that coordinate the efforts of the Navy and Marine Corps endure. Another byproduct of the development of amphibious doctrine was the institutionalization of innovation in the Marine Corps. Throughout the trials and experiments of the Fleet Exercises and Joint Army and Navy Problems, students from the Marine Corps Schools were encouraged to think outside of the box and to look for answers where there were not any school solutions. Officers gained experience from

failure, gleaning important lessons even when things went wrong. The atmosphere at the Marine Corps Schools fostered intellectual agility and challenged students with a dynamic curriculum.

Retired USAF Major General I.B. Holley describes the doctrinal process in three steps: assembling objective information, formulating doctrine from generalizations, and dissemination.[10] More importantly, doctrine evolves from the collected experience and knowledge of its authors, is formulated through analysis of the techniques that generally appear to succeed, and is disseminated to the users who will gain a common foundation to act upon. In developing amphibious doctrine, Marine Corps planners studied over two hundred historical landings. Each operation was dissected to determine which aspects were successful and which aspects led to failure. In the formulation phase, planners took their experiences gained from exercises and academic endeavors to draft the rough doctrine. Since the exercises were not conducted to demonstrate a predetermined outcome, the integrity of the results preserved their relevance and eliminated false assumptions. After *The Tentative Manual for Landing Operations* was published in 1934, it continued to withstand serious debate. Employing the doctrine in annual exercises broadened its acceptance and reinforced the common underpinnings which served as a basis for its formulation. Continuing the amphibious exercises also enabled the practitioners to experience for themselves why the generalizations held true.

This brief example of the development of amphibious doctrine demonstrates that an ethos of innovation in the Marine Corps has a historical foundation. While Sea Dragon is not a vehicle for formulating doctrine, the operational concepts and technology demonstrations will bear the doctrine of the future. Sea Dragon was established to test

accepted generalizations, taking the results at face value. There are no foregone conclusions; they will be ascertained from the results of experiments in the field. Equally important lessons will be derived from both successes and failures. Sea Dragon goes far beyond simply procuring the latest equipment for the Marine Corps. It is a process whereby the Marine Corps will turn the vision of Operational Maneuver From the Sea into reality.

Notes

[1] Cover letter in the preface of *Forward...From The Sea* signed by Secretary of the Navy John H. Dalton, Chief of Naval Operations Admiral J. M. Boorda, and Commandant of the Marine Corps General Carl E. Mundy Jr., Joint Electronic Library, Joint Staff, September 1996.

[2] Ibid., 3.

[3] Cover letter in the preface of *Operational Maneuver From The Sea* signed by Commandant of the Marine Corps General Charles C. Krulak, Joint Electronic Library, Joint Staff, September 1996.

[4] Ibid., 14.

[5] Moore, Capt Richard S. *Ideas and Direction: Building Amphibious Doctrine* (Marine Corps Gazette, November 1982), 50-51.

[6] Ibid., 53.

[7] Ibid., 52.

[8] Ibid., 54, and Moskin, Robert *The Marine Corps Story* (New York: McGraw Hill Book Company, 1992), 220-221.

[9] Moore, Capt Richard S. *Ideas and Direction: Building Amphibious Doctrine* (Marine Corps Gazette, November 1982), 56-57.

[10] Holley Jr., Major General I.B. *The Doctrinal Process: Some Suggested Steps* (Military Review, Vol. 59, Apr 79), 2.

Chapter 2

Recent Innovation

As was mentioned earlier, the Marine Corps has consistently sought to develop new doctrine in order to remain successful across a wide range of potential contingencies. General Lejeune's effort to hone amphibious operational techniques is but one example of the Corps' effort to remain relevant and ready. There have been more recent examples of this type of innovation. The utilization of the Fire Support Vehicle (FSV) and modification of the Task Organization of Weapons Company, 3d Battalion, 9th Marines (3/9), during OPERATION DESERT STORM were examples of a battalion's ability to task organize in a manner that most effectively accomplished the mission.

The FSV consisted of configuring a High Mobility Multi-Wheeled Vehicle (HMMWV) with sufficient radios and personnel to be able to coordinate all supporting arms. The mission of these vehicles was to direct artillery, mortar, and air support for the battalion while remaining independent from the maneuvering units. Early in the deployment to Southwest Asia, 3/9 found that the company fire support teams (FSTs) were not able to observe the battlefield while moving in an assault amphibious vehicle (AAV). In desert warfare, where speed and maneuverability are essential, the company FSTs could not keep up with fast-paced mechanized operations. What was needed was a set of eyes that could operate separately from the maneuver elements. Traveling forward

of the battalion, the Scout Platoon with the FSV was able to coordinate indirect fires to support the battalion's scheme of maneuver. Additionally, the FSVs enhanced the commander's situational awareness on the battlefield by improving visibility and facilitating engagement of the enemy at greater distances.

During OPERATION RESTORE HOPE in Somalia, 2d Battalion, 9th Marines, formed what became known as Team Tiger, built around the Headquarters and Service Company. With attachments such as Light Armored Vehicles (LAVs), the battalion created a mobile force that was capable of accomplishing missions from escorting grain shipments to cordon and search operations.

Also during OPERATION RESTORE HOPE, 3d Battalion, 9th Marines, created Task Force Hondo that was built around its Weapons Company. Reinforced with LAVs, AAVs, detachments from a truck company, engineers, Surveillance and Target Acquisition (STA), Psychological Operations, and many others, Task Force Hondo was the battalion's main effort in accomplishing security operations, mobile patrols, cordon and search operations, and grain shipments escort.

During each of these operations, the Marine Corps demonstrated its ability to tailor either an organization or its equipment to meet the needs of a given situation. Experimentation with the task organization of the Weapons Company, for example, was a pre-cursor to many of the initiatives espoused in Sea Dragon.

Sea Dragon Table of Organization (T/O)

Sea Dragon experimentation began with the formulation of a Special Purpose Marine Air Ground Task Force (SPMAGTF) that is extricably tied to elements of the Third Fleet.

This Marine Expeditionary Unit (MEU) size SPMAGTF is comprised of a command element (CE), ground combat element (GCE), combat service support element (CSSE), and an aviation combat element (ACE). The composition of this SPMAGTF is unique to a normal MEU regarding staff functioning, task organization and technology.

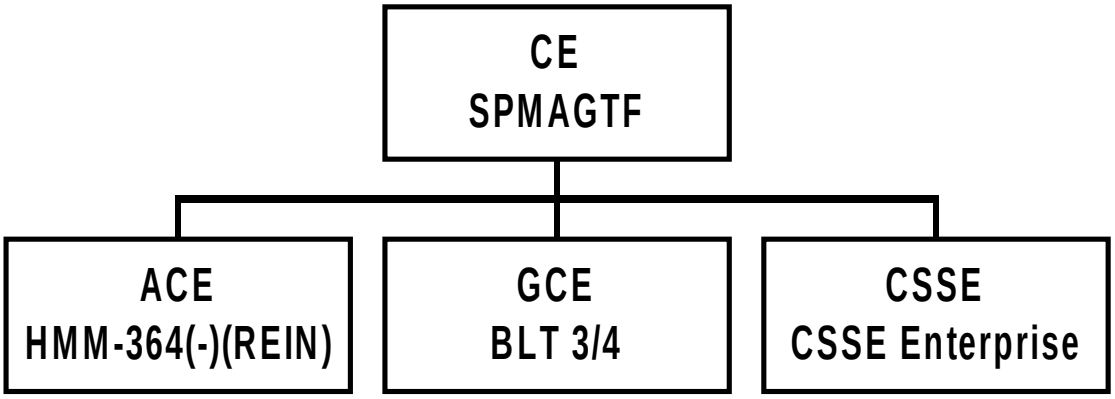

Figure 1. SPMAGTF Organization

The command element will be organized into cells by function rather than the traditional Napoleonic model of separate staff areas (S-1, S-2, S-3, S-4). The new command element will be comprised of a Combat Information Section (observe), Planning & Shaping Section (orient), Command Section (decide), and Engagement Coordination Section (act).[1] It will utilize new technology aided decision support processes to fight the SPMAGTF as an integrated unit.[2] This will flatten the decision making process while placing more demand on communications and timely and accurate intelligence. The command element for the SPMAGTF will be formed at the Marine Corps Tactical Systems Support Activity (MCTSSA), MCB Quantico, VA, and will stage at MCB Camp Pendleton, CA, to simulate a sea-based MAGTF Combat Operations Center (COC). The command element will test the command, control, communications, computers and

intelligence (C4I) systems link to the extended, non-contiguous battlefield at the Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, CA. It will be under the operational control (OpCon) of the Commanding General, I Marine Expeditionary Force (I MEF).[3]

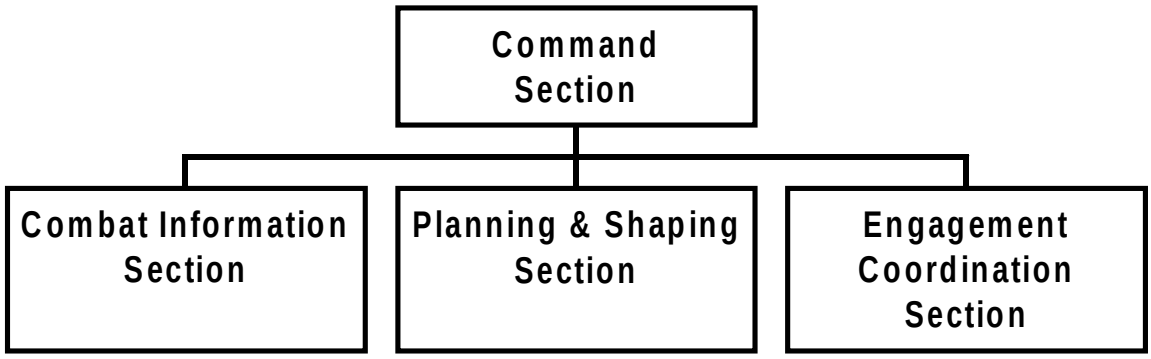

Figure 2. Command Element Organization

The MEU size SPMAGTF will also include a ground combat element initially built around 3d Battalion, 4th Marines (3/4).[4] The T/O of 3/4 includes artillery, combat engineer, and light armored vehicle support within the ground combat element, but omits Battalion Landing Team Reconnaissance assets and assault amphibious units.

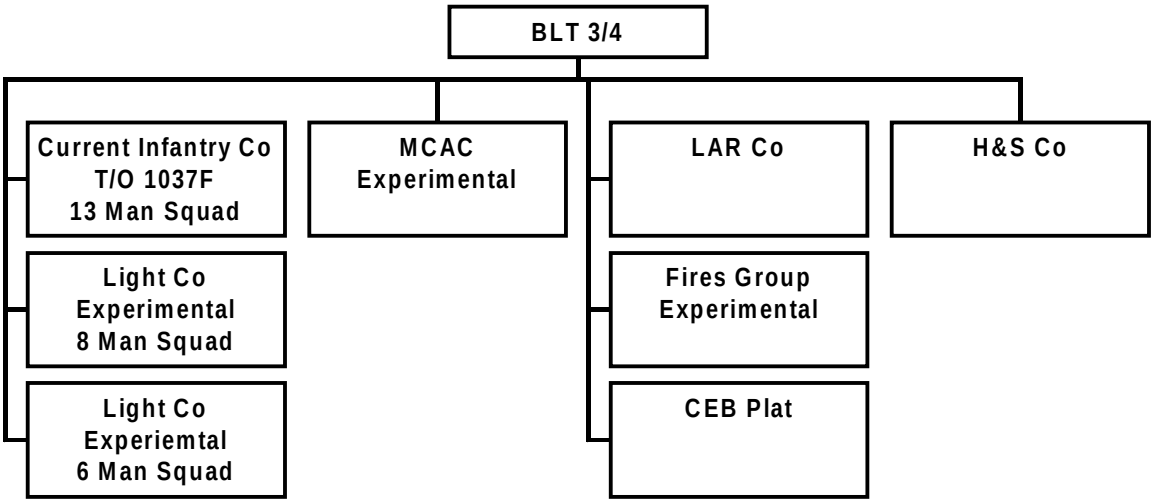

Figure 3. Battalion Landing Team 3/4

The task organization for Light Infantry Company with six man squads is comprised of the following:

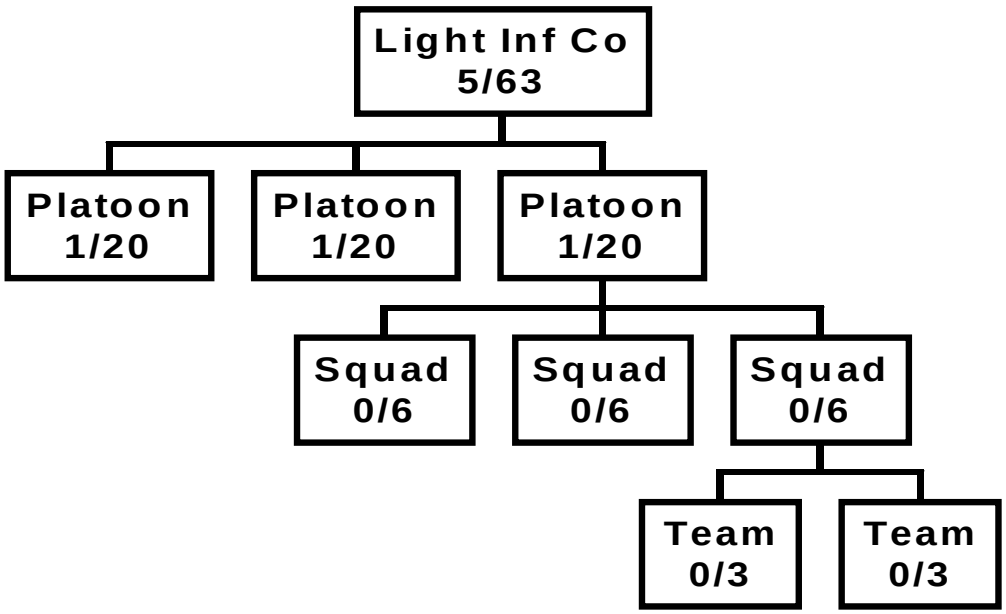

Figure 4. Light Infantry Company (6-Man Squad) Organization

A key element to Sea Dragon will be the experiments with different GCE configurations to identify the organizational structures that will best expand the

MEU(SOC) commander's influence on the battlefield. Enhanced connectivity will provide for a flattened command structure, enabling the commander to communicate directly with Marines in the field. Six man squads, comprised of 2 three man teams, will attempt to cover more area than the traditional squad through access to intelligence, logistics, and precision indirect fires. Smaller units may present less of a target while dispersion and connectivity will create better situational awareness.

The combat service support element will be an experimental organization from the 7th Engineer Support Battalion called CSS (Combat Service Support) Enterprise. CSS Enterprise, testing an on-line request, tracking, and distribution system, will attempt to limit the service support land-based footprint and to provide more responsive support than a current MEU Service Support Group (MSSG).

The aviation combat element (ACE) will be a composite squadron centered around HMM-364 (Reinforced). This ACE is the standard reinforced composite squadron found in the MEU. The ACE will simulate future capabilities (i.e. the MV-22 Osprey) and demonstrate anticipated mission profiles during the execution of the Advanced Warfighting Experiments (AWEs). The specific functions of Marine Aviation that the ACE will execute are Assault Support, Offensive Air Support and a limited amount of Aerial Reconnaissance. The remaining three functions of Marine Aviation will be executed by units not organic to the SPMAGTF.

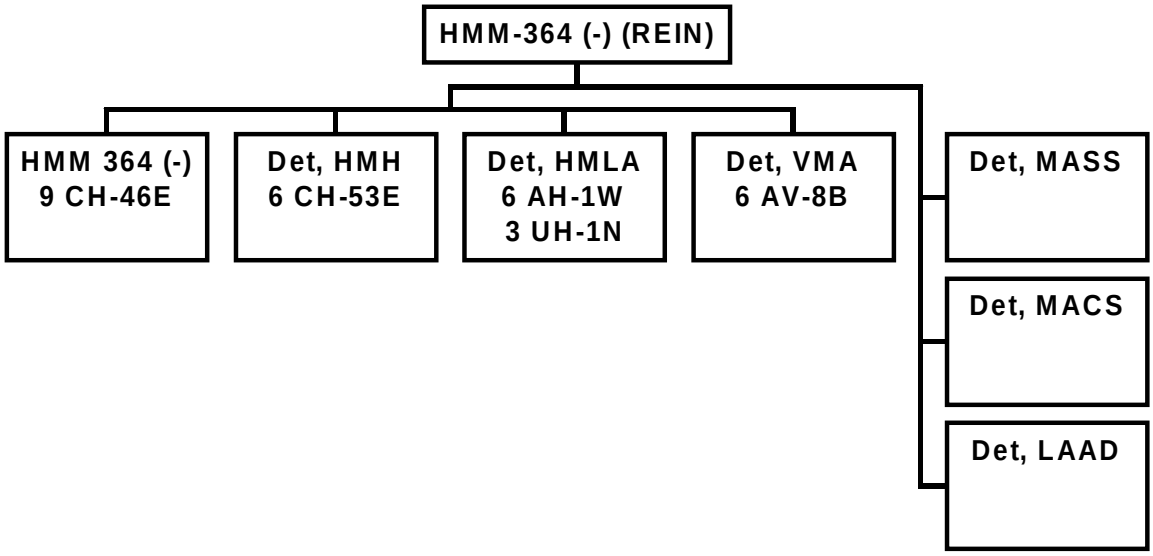

Figure 5. HMM-364 (-) (REIN)

In addition to the aforementioned, the SPMAGTF will incorporate the following innovations during AWE Hunter Warrior.[5]

- An additive capability will be implemented for infantry elements to employ smaller squads. Each squad can acquire and report targets to the command element and help shape the battlefield.
- A mobile, combined arms company with organic firepower and mobility will be configured to enable operational maneuver elements to gain decisive advantage.
- A reoriented CSSE that breaks the traditional logistics paradigm will be configured to provide customer oriented distribution system for tactical logistics supply and maintenance. This will include such innovative efforts as resupply using unmanned aerial delivery systems (UADS) with greater reliance on sea-basing. CSS Enterprise will be task organized into Mobile Combat Service Support Detachments (MCSSDs) for employment in a direct support mode to the Ground Maneuver Element(s) (GME) by:
- Providing an independent MCSSD in direct support to each GME.
- Task organizing the MCSSD such that it presents the lightest footprint possible while maintaining sufficient capability to support its GME in the execution of SPMAGTF missions, with particular focus on raids and limited deep operational maneuver;
- Providing the source of immediate resupply of classes I, II, III, limited IV, V and IX to the GME, and;
- Providing a conduit for the deliberate resupply of classes I, II, III, IV, and IX.

Another area of interest is engagement by indirect fires; this is not a new concept. Marines traditionally assault a position by first coordinating all available supporting arms. With this support, Marines close with and destroy a weakened, confused, and scared enemy. The Sea Dragon process of experimentation explores means to increase that capability to engage the enemy with indirect fires. Marine small units will be empowered with technology and training that will enable them to engage the enemy with indirect fire at greater distances.

The SPMAGTF will be trained and equipped to execute the following five mission capabilities for experimentation in AWE Hunter Warrior: Combined Arms Attacks, Raids, Limited Search and Attack, Reconnaissance, Surveillance and Target Acquisition, and Limited Operational Maneuver.

The potential Revolutions in Military Affairs (RMA) that may result from Sea Dragon will be vital to the Marine Corps' quest to remain America's 911 force of choice. While the future will include a shrinking defense budget, the roles of the military and the frequency of real world contingencies will expand. The Sea Dragon five year Experimentation Plan that begins with Hunter Warrior, and is followed by Urban Warrior and Capable Warrior, will promote rapid military innovation while meeting current commitments; it is oriented toward Naval and joint expeditionary capabilities, and will serve to incorporate the latest science and technology into modern warfare.[6]

The innovation espoused in Sea Dragon is not new. It has been, perhaps, reinstitutionalized and may lead to a futuristic Marine that has the capabilities of the Mobile Infantry described in Robert Heinlein's *Star Ship Troopers.* This process may result in a Marine that is required to be highly trained and adept with the leading edge of

technology, and guided by a warfighting doctrine that will yield success in a wide range of missions.[7]

Notes

[1] Sparling, Lieutentant Steven C. *Riding the Dragon of Change* (Surface Warfare July/August 1996), 5.

[2] Commandant's Warfighting Laboratory brief, *Sea Dragon*, September 1996, 19.

[3] Commandant's Warfighting Laboratory point paper, *SPMAGTF(X) Overview*, 25 September 1996, 1.

[4] Commandant's Warfighting Laboratory brief, *Sea Dragon*, September 1996, 6.

[5] Ibid., 18.

[6] Sparling, Lieutenant Steven C., *Riding the Dragon of Change* (Surface Warfare July/August 1996), 6.

[7] Sparling, Lieutenant Steven C., *Riding the Dragon of Change* (Surface Warfare July/August 1996), 6.

Chapter 3

Advanced Warfighting Experiments

Sea Dragon combines current and advanced technology with new operational concepts under a five year plan of development and experimentation.[1] The goal of these experiments is to demonstrate the validity of the new technology and concepts, and assess their potential utility during a series of three Advanced Warfighting Experiments (AWEs). Successes and failures will be determined during the course of the experiments, incorporated into lessons learned, and will ultimately result in new organizational structures, equipment, and operational techniques to dominate and win on the future battlefield. It is important to note that there are no preconceived outcomes for the AWEs; each new concept and technology will be examined based upon its own merits. Sea Dragon is divided into three distinct phases with a different focus for each.

The first phase is now in progress and is designated "Hunter Warrior".[2] This phase began in March of 1996 and is scheduled to end in March 1997, culminating with exercise Hunter Warrior at the Marine Corps Air Ground Combat Center (MCAGCC) Twenty Nine Palms, CA. This two week force-on-force experiment will test small team concepts, with many futuristic capabilities, against a conventional armor equipped enemy. Sea Dragon forces will attempt to extend the commander's influence over the battlefield through the dispersion of forces, in both open and mountainous terrain, while fighting at

the mid-intensity level. Dispersed, small team concepts will rely heavily upon advanced technology.

The second phase, titled "Urban Warrior," will then begin and continue through June 1999, culminating in an exercise by the same name. This exercise will take place in Twenty Nine Palms. As the name implies, the focus of this phase is to attempt to demonstrate concepts and technology applications in the urban and near-urban littoral.[3] Webster's New World Dictionary defines the littoral as "of, on, or along the shore; the region along the shore." If one considers that 70% of the world's population and major cities are in the littorals, that 80% of the world's capitals lie in the littorals, that most nuclear power plants are built on or near the littorals, and that 70% of the countries with or possessing the capability to produce and manufacture nuclear weapons are in the littorals, one can see the importance and the impact that this phase will have on urban and near-urban operations.

The third and final phase is "Capable Warrior." It will run from July 1999 through the year 2001 and will focus on those concepts and techniques that apply to a major regional contingency (MRC). This Naval Expeditionary Task Force and Marine Expeditionary Force level operation will combine virtual and live forces to experiment at the operational level, transitioning from peacetime to crisis and conflict with the objective of containing or defeating the enemy.

Each phase builds to the next, a progressive step until Sea Dragon is over and the lessons can be merged with current tactics, training, and procedures. Each phase will attempt to demonstrate different operational concepts. Technological applications may span more than one phase, however, the environment in which they will be evaluated will

vary with each phase. A specific technology or concept may prove to be useful in one area while failing to meet success criteria in another. The following describes some of the concepts and technologies that will be evaluated during each phase.

During "Hunter Warrior," the Marine Corps will disperse the reorganized elements of the SPMAGTF to extend the commander's influence over the battlefield. High technology communications systems will allow deployed forces to act as additional eyes for the MAGTF commander, improving his overall situational awareness. Calling and controlling fires, sharing information and intelligence, and flattening the control structure are all areas that Hunter Warrior will attempt to demonstrate. The modern battlefield is becoming increasingly more lethal, and because of this, the principles of war must be achieved through different means. The massing of effects on the objective vice the massing of forces can be achieved through precision weapons or combining the effects of fires. Controlling tempo, enhancing security, and achieving surprise through the economical use of small forces will be attempted by Sea Dragon forces. Small teams will attempt to demonstrate the ability to coordinate attacks on enemy forces, logistics stockpiles, and command and control nodes from multiple directions while remaining out of harm's way. Infiltration and stealth, supported by advanced logistics concepts, will be used to advantage to place the enemy in a dilemma. The goal is to prevent the enemy from being able to mount any type of offensive and to deny his ability to target such small forces effectively.

During the course of AWE Hunter Warrior, a cellular command structure will be employed to enhance targeting, streamline decision-making, improve situational awareness, and manage the intelligence requirements of a dispersed operation. Organizing

the command element into Combat Information, Planning and Shaping, Command, and Engagement Coordination sections will enable the commander to manage vast amounts of information that can result from the large number of teams connected to the command element. Each command section will act as a filter, feeding only pertinent information to the commander in order to prevent information overload. The goal is to get the right information to the commander in a timely manner. This "flattened", more horizontal, structure will place more decision-making authority in the hands of forces arrayed throughout the battlefield. Enhanced connectivity will provide these Marines with access to more intelligence, while digital communications will enable the commander to pass selected information and coordinate the actions of the teams on the ground.

Improvements in combat service support through precision location reporting and digital supply status reporting will keep units supported without the need to create and man vulnerable land-based stockpiles as before. This "just-in-time supply" concept will be heavily supported by sea-based logistics.[4] Enhanced technology will again provide the link between deployed forces and the MAGTF's combat service support capability. Mobile Combat Service Support Detachments will have the means to request supplies, monitor supply stocks, and coordinate delivery to dispersed elements of the MAGTF. This capability, along with new delivery means such as the MV-22, Unmanned Aerial Vehicle (UAV), Unmanned Ground Vehicle (UGV), and the LCAC, will augment the over-the-horizon aspects of naval maneuver warfare.

As always, the Navy's stand-off capability to provide fire support will be critical. Exploring concepts to improve battlefield dominance utilizing precision targeting systems with a mix of precision and non-precision weapons will require all of the capabilities

resident in the NETF. Combining the actions of carrier task groups, amphibious ready groups, and MAGTFs in "brown water" operations will be a large undertaking. Recent developments in NETF integration will be discussed in the next chapter.

Supporting the MAGTF in its mission ashore will be the Arsenal ship, carrier air, and the Landing Craft Air Cushion (LCAC). Although the Arsenal Ship is still on the drawing board, the concept of a ship with tremendous stand-off capability that is able to deliver the firepower of several ships will bring a new level of support to the Marine on the ground. Sea Dragon will address the additive capability of attack and command and control aircraft from the carrier, and Naval Surface Fire Support (NSFS) from other surface combatants. The LCAC, while fully deployed with proven utility, will provide a high speed means to deliver cargo from over-the-horizon through a vast majority of the world's littorals.

At a cost significantly less than manned aircraft, UAVs will proliferate on the battlefield. It is anticipated that UAVs will take on missions normally reserved for manned aircraft. During Hunter Warrior, UAVs will conduct reconnaissance, battle-damage assessment, logistics delivery, and communications relay. Unmanned ground vehicles will match their air counterparts by accomplishing such missions as reconnaissance, battle-damage assessment, fire support, target identification, laser designation, and personnel evacuations. It is envisioned in Sea Dragon that UAVs and UGVs will have the capability to recover wounded or downed pilots from the battlefield. UGVs will provide commanders with tremendous flexibility, offering new options while eliminating the risks of exposing Marines unnecessarily.

The Osprey will enter the Marine Corps inventory as the medium lift replacement for the CH-46E Sea Knight. It has the payload, speed, and the range that will allow ships to

stay over the horizon, beyond the reach of many modern weapons systems. Although the Osprey will not enter service prior to the AWEs, many of the targeted technologies will be fitted into ACE aircraft to evaluate their potential in enhancing the MAGTF's mission. Position reporting and communications/data relay equipment will be evaluated for potential installation into the Osprey. ACE aircraft will simulate Osprey flight profiles and characteristics to evaluate support capabilities for ground units.

Information Warfare (IW) will play a critical role during Hunter Warrior due to the MAGTF's heavy reliance on communications and intelligence. Sea Dragon forces will explore the concept of using aerostat balloons, tethered from ships, for communications relays that network dispersed units on the extended battlefield. Eventually, the concept of employing limited duration, low-earth orbit satellites in response to emerging crises will be examined to meet the needs of a high technology and information dependent force. Communications with individual Marines may be possible. Information screens that project data on "heads-up display (HUD)" type devices may allow Marines to stay in touch and fight at the same time. The most important challenges of this concept will be managing information and determining the point where information overload begins. Commanders will have the capability to tailor the access to specific information on a need to know basis. Evaluating the commander's influence and situational awareness are also key elements in determining the success of this phase.

Sea Dragon does not propose to eliminate the traditional methods for organizing the MAGTF. There will continue to be times where the MAGTF must operate with conventional tactics and procedures. The operational concepts being explored during Hunter Warrior are looked upon as "additive", in that they will add to the commander's

means of accomplishing the mission. The commander will dictate the disposition of his forces based on METT-T (mission, enemy, terrain and weather, troops and fire support, and time). Operations in an urban environment present problems that are vastly different from desert warfare. Sea Dragon addresses these considerations during the second phase, Urban Warrior.

Urban Warrior will expand upon many of the concepts described in Hunter Warrior. Operational concepts will be oriented toward maneuvering in urban areas, urban close combat, non-lethal weapons, and aviation operations in the urban environment.

Large forces will still be required to secure urban areas. Surgical strikes will require precision guided weapons, keeping lethality high while minimizing collateral damage. Actions taken by the British in Northern Ireland and Israelis in the West Bank are being reviewed for lessons that are pertinent for modern urban warfare. Urban Warrior seeks to refine Military Operations in Urban Terrain (MOUT) in the context of new technologies and operational concepts. The Navy will play a major role by providing a base and a means for metering forces into and away from the operations area. Commanders will control the number of forces moving in or out of the area depending on the situation.

Many of the previous technologies will undergo further evaluation during Urban Warrior. UAVs and UGVs will be critical to moving in and around urban areas. UAVs will track and keep areas under 24-hour surveillance. UGVs can move through the streets designating targets with lasers or conducting mine-sweeping operations. Due to the large non-combatant civilian populations in urban areas, non-lethal weapons may be required. The Marine Corps is the lead agency on their development. These weapons may incapacitate victims through shock or by possibly covering a belligerent with a sticky

solution which hardens. Other weapons in the non-lethal category that will undergo evaluation include MK4 and M9 Oleoresin Capsicum agent dispensers, 12-gauge Stinger grenades, fin-stabilized rubber and beanbag rounds, 40 mm wood ammunition, and foam. Also, UAVs may be utilized to dispense riot-control type agents.

Sensor deployment and intelligence gathering will be critical in urban operations. UAVs, UGVs, electronic sensors, and aerostat balloons are all platforms that will be incorporated in Urban Warrior. After clearing buildings, sensors can be placed so that security teams are not required to reoccupy areas already cleared. Temporary satellites will be used in an attempt to provide optical as well as communication coverage.

In the final phase, "Capable Warrior," the concepts proven through the first two phases will then be put through additional experimentation to further prove their worth in a major regional contingency. Larger NETF and MEF size forces will be used in either virtual or real exercises to validate these concepts. Once the experimentation is over, those concepts and technologies that enhance the capabilities of the Navy/Marine Corps team will then affect the doctrine of MAGTF employment.[5]

Sea Dragon has begun. The first phase is underway and almost complete. As the Hunter Warrior AWE comes to a close, both failures and successes will bring forth valuable lessons that will undergo further scrutiny as the Marine Corps prepares for the 21st century. It is an evolutionary process where the marriage of leading edge technology and bold operational concepts will build a new foundation of what is generally accepted as effective, in light of the changing nature of the strategic environment. Sea Dragon holds the vision and mandate to apply innovation to enhance the capabilities of the Navy/Marine

Corps team. Hunter Warrior, Urban Warrior, and Capable Warrior provide the means to build that foundation.

Notes

[1] Commandant's Warfighting Lab, *Sea Dragon*, Draft Wargaming & Advanced Concepts paper, 1.

[2] Sparling, LT. Steven C., *Riding the Dragon of Change*, Surface Warfare, July/August 1996, 4.

[3] Commandant's Warfighting Lab, *Urban Warrior AWE*, Point Paper, 25 Sept 1996, 1.

[4] Commandant's Warfighting Lab, *Long Poles in the Sea Dragon Tent*, 25 Sept 1996, On-Line. Internet. Available from://ismo-www1.mqg.usmc.mil/cwl-main/html/m&mcap.htm, 1.

[5] Commandant's Warfighting Lab, *Sea Dragon*, Draft Wargaming & Advanced Concepts paper, 2.

Chapter 4

Naval Expeditionary Task Force (NETF)

Sailors and Marines have deployed together on naval combatants since the founding of the American nation. Yet, after two hundred and twenty one years, and many successful naval engagements and operations, the two services are still fine-tuning their operational command relationships. Historically, Navy Carrier Task Groups (CTGs) and Amphibious Ready Groups (ARGs) with embarked Marine forces trained and deployed separately. During contingency operations, naval doctrine provided guidance for the integration of the two forces under the CTG commander, who was the Officer in Tactical Command (OTC). This organizational structure has long been criticized for failing to provide autonomy for ARG and MAGTF commanders, while limiting access to the capabilities of the CTG for support of amphibious operations. Amphibious forces were not normally afforded coequal status with the subordinate warfare commanders under the Composite Warfare Command (CWC) structure. The Naval Doctrine Command recently drafted proposed doctrine to address these shortcomings.[1] In short, the ARG and MAGTF commanders will be designated as subordinate warfare commanders, coequal to the other warfare commanders, when forces deploy as a Naval Expeditionary Task Force. Following this lead, the CINCs have agreed upon the concept of combining the CTGs and

ARGs from predeployment training through deployment, providing a force capable of realizing the vision of “Forward... From the Sea”.

Traditional CTG & ARG/MEU(SOC) Operations

Deployed Naval forces traditionally consisted of individual Surface Action Groups (SAGs) and Carrier Battle Groups (CVBGs), now designated Carrier Task Groups (CTGs), and Amphibious Ready Groups (ARGs). The twelve CTGs continue to be the Navy’s premiere forward deployed force. Combined CTGs and ARG/MEU(SOC) forces are designated NETFs. Integrating these forces has been a slow process. For brevity, discussion of ARG/MEU(SOC)s will be abbreviated to the acronym ARG. Until recently, ARGs and CTGs worked-up together to a limited degree, and then deployed separately. There was scant opportunity to develop concrete working relationships. Fleet predeployment training schedules now include a Joint Fleet Exercise (JTFEX), where the two forces conduct amphibious operations with support from air, surface, and submarine elements of the CTG. Operational Tasks (OPTASKs) are developed by warfare commanders to establish a common baseline for the two forces to operate together. The procedures and agreements established in these documents are further refined to meet CTG and ARG requirements as the predeployment process continues. The documents are finalized and become the accepted procedures for integrated operations. Prior to this, the forces completed the remainder of their predeployment training and deployed individually. Limited interaction during the predeployment training cycle resulted in ad hoc command relationships between the force commanders, which were routinely personality driven. Recent changes to CTG and ARG deployment cycles direct the two forces to deploy on

the same date. This example is one of many that has contributed to integrating the actions of each element within the NETF.

Composite Warfare Commander Doctrine

The CWC is normally designated as the OTC. Depending upon the situation, he may choose to delegate CWC responsibility to the next senior commander. The Navy has traditionally relied upon the Composite Warfare Commander (CWC) structure for the command and control of assets within the CTG. This structure assigns warfare functions to subordinate warfare commanders who autonomously execute those operations necessary to accomplish assigned and implied missions. The CWC promulgates his daily commander's intent which provides subordinate warfare commanders with the flexibility to conduct their assigned tasks. He further employs command by negation, which provides subordinate commanders with freedom of action to direct the limited resources of the CTG. The CWC will negate the order of a subordinate commander if it fails to effectively fulfill the requirements of the CTGs mission.

The subordinate commanders are divided into four functional areas. The commanders position themselves within the CTG to effectively conduct their assigned mission. The table lists each commander, his mission area, and his location within the CTG.

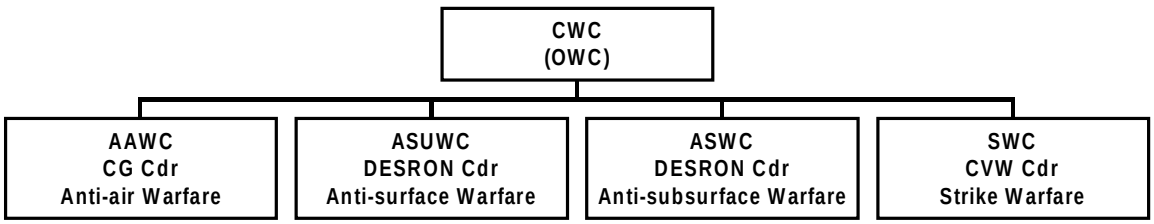

Figure 6. CWC Command Structure

Doctrine for command relationships when CTG and ARG forces were integrated depended upon the assigned mission and phase of the specific operation. The doctrine established three distinct command structures, designated Situation A, Situation B, and Situation C. These command relationships are defined as follows:

Situation A. The OTC, as the CWC, commanded all CTG and ARG assets as a combined force. The CWC would normally be the embarked one or two star admiral of the Cruiser Destroyer Group (CRUDESGRU) or the Carrier Air Group (CARGRU). Under this command structure, the ARG and MEU(SOC) commanders were designated subordinate warfare commanders, responsible to the CWC. This command structure had significant limitations when the ARG commander was tasked with the primary mission of the CTG. Although he was responsible to the CWC for amphibious operations, the ARG commander did not have the doctrinal foundation to direct the employment of the other assets in the CTG. Additionally, this command relationship limited the autonomy of the ARG to act independently. Situation A was primarily used during the movement phase to the objective area of an amphibious operation.

Situation B. The ARG and CTG operated independently, but the senior officer embarked in the CTG remained the CWC. The ARG commander retained tactical command of amphibious forces for specified operations, but was still subordinate to the CWC. During amphibious operations, Marine forces remained under the command of the ARG commander until they went ashore. Situation B was utilized when the ARG was in either the movement or assault phase of an amphibious operation. Doctrine recommended a shift from Situation A to B prior to entering the Amphibious Operations Area (AOA). In Situation B, the ARG commander, with tactical control over amphibious forces, had

greater autonomy to conduct amphibious operations. However, greater autonomy led to less integration.

Situation C. This command structure was implemented when the two forces operated independently. The ARG commander was designated the OTC of amphibious forces and the CTG commander remained the OTC/CWC of the CTG. Situation C presented the ARG commander with the greatest amount of autonomy. Each commander retained discrete command authority of his assigned forces and decided upon the level of support that he would provide to the other force.

The command structures delineated in Situations A, B, and C attempted to give the CWC the most capable and responsive task force. Yet, the doctrine was not considered viable for many ARG and MEU(SOC) missions. In Situations A and B, the MAGTF, or landing force, commander also remained under the tactical control of the CTG CWC. In this position, he lacked the authority to direct CTG assets in support of amphibious operations. As ARG and Marine forces gained greater autonomy, the effects of the integrated application of naval power in support of amphibious operations was diminished.

NETF Command Relationships

Recent efforts by the Naval Doctrine Command (NDC) resulted in NETF command and control doctrine that promises to provide a mission-oriented command structure appropriate for integrated operations.[2] This doctrine firmly establishes the ARG and MAGTF commanders as subordinate warfare commanders within the CWC framework. Designated as the Amphibious Warfare Commander (AMWC) and the Landing Force Commander (LFC) respectively, these commanders enjoy equal treatment in the

apportionment of NETF resources. During routine operations, elements of the NETF may be widely dispersed and operating independently, conducting activities ranging from individual ship port visits to joint exercises. In the event of a contingency or major exercise requiring integrated naval forces, the doctrine enables the CWC to designate supported and supporting subordinate commanders based upon the mission assigned to the NETF. Figure 7 is an organizational diagram of a Naval Expeditionary Task Force.[3]

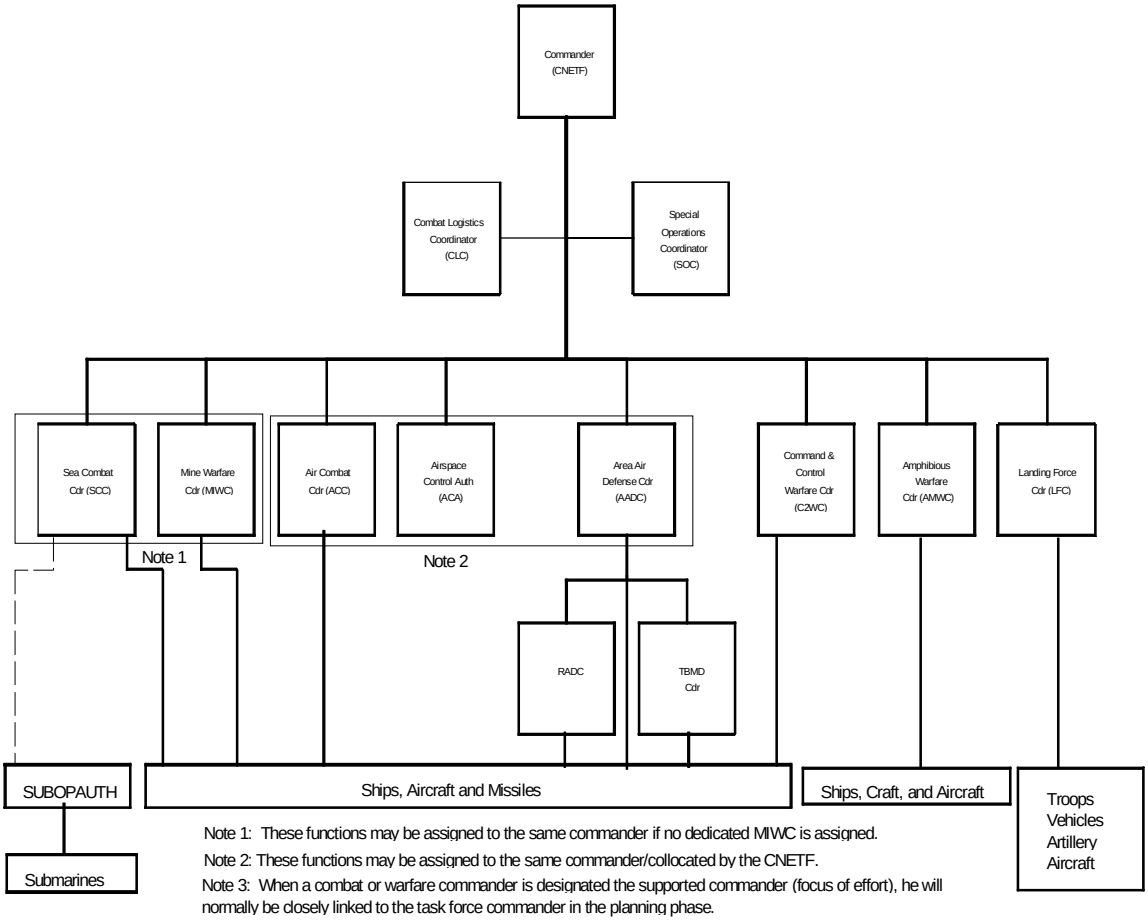

Figure 7. NETF Configuration

In amphibious operations for example, the MAGTF commander, as the supported subordinate commander, will not only retain command of his own organic MEU(SOC) forces, he will also have the capability of being supported and taking tactical control of other CTG assets. This includes the employment of task group surface combatants, naval surface fires, and strike and support aircraft from Carrier Air Group (CAG). However, the CWC/OTC retains veto power through command by negation.

Of particular interest is the recent development of the new "Power Projection Airwing". This airwing provides warfare/functional commanders with fifty three strike aircraft, including three F/A-18 HORNET squadrons (including one U.S. Marine Corps squadron), one air to ground capable F-14D TOMCAT squadron, and the remaining support aircraft of the CAG's total of 78. Access to these additional NETF aircraft not only provides the MAGTF commander with the increased flexibility for traditional amphibious missions, it offers opportunity to meet future operational and technical initiatives anticipated by Sea Dragon.

Command relationships can change, as in the circumstance where the CWC/OTC is assigned as a Joint Task Force (JTF) Commander. The structure enables the CWC/OTC, as the JTF commander, to retain command of the NETF, or to designate a subordinate CWC from within the NETF. The doctrine also accommodates the integration of additional CTGs and/or ARGs into the Task Force. As the scope of operations expands beyond the capabilities of the initial NETF, follow-on forces will be integrated into the command structure established by the primary NETF. Command relationships for joint operations are also addressed. An example of this change in command relationships may be seen in the changing role of the Air Component Commander in the NETF. In

operations where the NETF commander desires to establish a Joint Forces Air Component Commander (JFACC) Afloat, the ACC and aircraft carrier commanding officer establish and man the JFACC Afloat. The JFACC Afloat oversees the air operations of one or more NETFs. As the littoral operation grows in scale, this JFACC Afloat can further support the JTF commander who would be embarked on a Landing Command Control (LCC) ship. If the scale of the operations continues to increase with the preponderance of aircraft shifting to shorebased units, the NETF enabling force would transfer the JFACC assignment to an ashore establishment. Figure 8 describes this expanding continuum from the perspective of the Air Component Commander (ACC).[4]

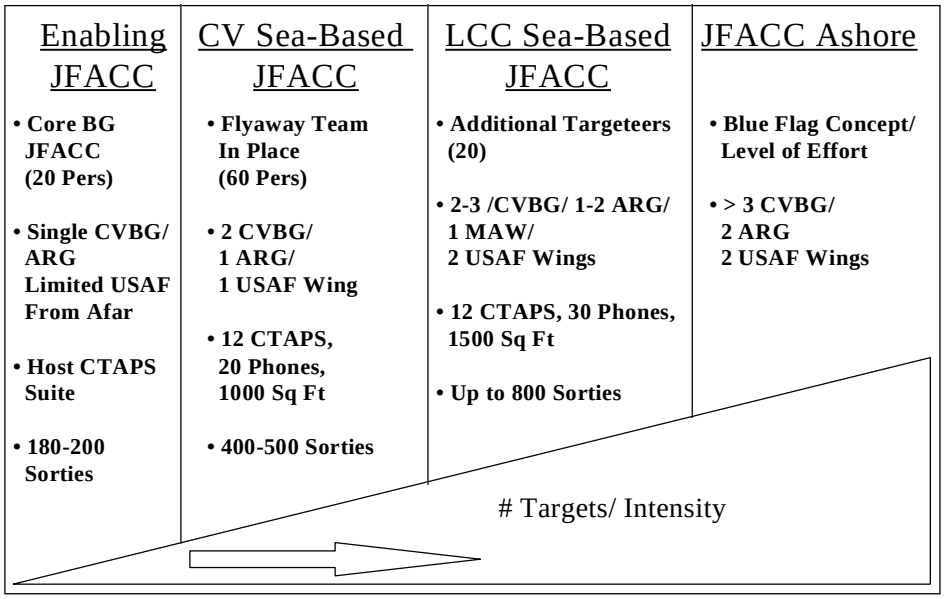

Figure 8. Sea Based JFACC Continuum

NETF Doctrine

The NETF will retain the traditional command structure of the Composite Warfare Commander with subordinate warfare/functional commanders. The doctrine breaks from the past relationships by further delineating the supporting and supported functional commanders. This distinction changes the focus of operations away from hostile forces to the assigned missions. In other words, the assigned mission becomes the driving factor in delineating support and supporting relationships. The OTC designates supported and supporting subordinate warfare commanders by determining the mission to be accomplished and identifying which functional commanders play the primary roles in these missions. These concepts parallel the doctrine of supporting and supported commanders in the Joint Task Force as defined in Joint Pub 5.

The most important change establishes the AMWC and LFC as subordinate warfare commanders who train and deploy with their CTG counterparts.[5] In missions where the ARG would join the NETF in order to conduct amphibious or landing force operations, the LFC and AMWC are designated the supported commanders and will receive both the latitude in command and control required for these operations, as well as the option to coordinate the other combat power in the NETF. Depending upon the MEU(SOC) operation directed, the LFC/AMWC will vary their employment of NETF assets. While Military Operations Other Than War (MOOTW) may require only limited support from the other subordinate warfare commanders, more intense levels of conflict may require an integrated attack with coordination and support of all remaining NETF assets.

In situations A and B, where an amphibious operation was planned, the ARG, while still under the direct control of the CWC, retained tactical authority of organic ARG

assets. The NDC proposes designating the ARG as the supported commander, to overcome the previous shortcomings of limited access to resources and limited autonomy in ARG operations. It provides the ARG commander with real-time flexibility in coordinating and directing amphibious forces without CWC interference. It also provides the combined combat power of the NETF to the amphibious force.

Currently, the Constellation CTG and Boxer ARG are following the new NETF doctrine in their predeployment training in preparation for an April 1997 WestPac deployment. These efforts will test the proposed NETF command and control doctrine while providing naval forces for Hunter Warrior in February 1997. The results of these efforts will help to determine whether the NETF doctrine meets the requirements of CTG, ARG, and MAGTF commanders.

Notes

[1] Naval Doctrine Command, *Naval Expeditionary Task Force Command and Control*, Working Paper, 01 July 1996, 2.

[2] Naval Doctrine Command, *Naval Expeditionary Task Force Command and Control*, Working Paper, 01 July 1996, 3-2-1.

[3] Naval Doctrine Command, *Naval Expeditionary Task Force Command and Control*, Working Paper, 01 July 1996, 3-2-2.

[4] Naval Doctrine Command, *Naval Expeditionary Task Force Command and Control*, Working Paper, 01 July 1996, Figure 15-1, 3-15-3.

[5] Naval Doctrine Command, *Naval Expeditionary Task Force Command and Control*, Working Paper, 01 July 1996, 3-12-1.

Chapter 5

Command Relationships In The Future MEU(SOC) Environment

Up to this point we have described the Navy and Marine Corps' vision for the future, highlighted a historical period where innovation was critical to the realization of a successful amphibious doctrine, and addressed the proposed structure and operational concepts that future MEU(SOC)s may implement. This paper also described the methods by which leading-edge technology, melded with bold concepts, will undergo experimentation and critique to further the capabilities and effectiveness of deployed naval forces. Lastly, the most recent evolution of command and control doctrine, establishing the positions of Amphibious Warfare Commander and Landing Force Commander as coequals to the other subordinate warfare commanders in the NETF, was illustrated.

This paper will now recommend supported and supporting relationships within the NETF for specific MEU(SOC) missions, to address the various levels of conflict. These suggested relationships are made in light of the MEU(SOC) organization as it is envisioned by Sea Dragon planners. Attempting to synthesize the employment of a hypothetical Marine Corps organization with a recognized naval command structure may seem inappropriate when it is applied within the confines of developing naval doctrine. However, during the 1920s and 30s, students at the Marine Corps Schools were

comparing hypotheticals in their efforts to determine the proper structure, equipment, and doctrine for amphibious operations. To add relevance, it is necessary to make assumptions about the environment if Sea Dragon comes to fruition as it is now envisioned.

OMFTS describes a world characterized by the breakdown of order, weapons of increased lethality and precision, and the proliferation of technology. To meet this challenge, MEU(SOC)s will operate from Naval ships that utilize maneuver from the sea to an advantage. The NETF commander can tailor command relationships to support the landing force mission. Marine forces will use maneuver to exploit precision fires contrary to massing fires to maneuver. Similar to naval forces, Marines will choose the time and location to engage the enemy. Small elements will require minimum sustainment ashore, eliminating the vulnerable logistics footprint that is currently required. The MEU(SOC) commander will be able to control elements located ashore, in the air, and throughout the NETF through digital networks. Extensive use of UAVs and UGVs will enhance the commander's situational awareness, support information warfare, and reduce the vulnerability of his forces. Sea-based Marines will utilize high technology, coupled with sound doctrine, to multiply the number of options available to the commander.

The following narratives and tables describe supported and supporting command relationships for MEU(SOC) operations, consistent with command and control doctrine. These relationships capitalize on the resources of the NETF. As these are MEU(SOC) missions, the LFC will be the supported commander in each case. The missions presented below span the levels of war from peacetime to high intensity conflict. Integrating the efforts of the subordinate warfare commanders will serve as a force-multiplier. Tables

describing the support by each warfare commander will be prefaced by a description of how the mission relates to the MEU(SOC). Subordinate commanders within the NETF include:

- Landing Force Commander (LFC): The senior embarked Marine commander; conducts amphibious operations.
- Amphibious Warfare Commander (AMWC): Commander of the Amphibious Task Force; conducts amphibious operations.
- Air Combat Commander (ACC): Commander of the embarked Air Wing; conducts air operations.
- Airspace Control Authority (ACA): Delegated by the NETF Commander; establishes airspace control system.
- Area Air Defense Commander (AADC): Senior cruiser commander, conducts air defense operations.
- Regional Air Defense Coordinator (RADC): Senior cruiser commander; monitors air defense situation and implements area air defense plans.
- Command and Control Warfare Commander (C2WC): Designated by the NETF commander, establishes command and control warfare plans and policies.
- Sea Combat Commander (SCC): Commander of the Destroyer Squadron (DESRON), conducts surface and subsurface sea combat operations.
- Mine Warfare Commander (MIWC): Delegated by the NETF commander; plans and conducts mine warfare operations.
- Special Operations Coordinator (SOC): Senior embarked Special Operations Forces (SOF) commander; synchronizes and integrates special operations.

Following each table, a summary is provided which highlights the advantages of integrating the resources within the NETF.

Amphibious Assault

The amphibious assault mission is considered the traditional forcible entry capability of the Marine Corps. Coordinated attacks, supported by Naval Surface Fire Support (NSFS) and close air support (CAS), serve to overwhelm enemy forces as Marines establish a force beach head for follow-on operations. Sea Dragon forces will capitalize on intelligence gained from UAVs to find gaps in enemy positions. Infiltration tactics

from Over-The-Horizon (OTH) will enable small Marine teams to maneuver to exploit enemy vulnerabilities while limiting the exposure of friendly forces. Precision weapons will expand the commander's influence in the Amphibious Operations Area (AOA) by striking directly at enemy centers of gravity. Integrated command and control doctrine will provide latitude for the NETF to direct support relationships among the subordinate warfare commanders.

Table 1. Proposed Amphibious Assault Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
Amphib Assault	LFC	AMWC	Naval maneuver Logistics/Maintenance Intelligence Command & Control Communications Medical NSFS Deception Search and Rescue
		ACC	Strike CAS Reconnaissance Interdiction FAC(A)/SAC(A) Electronic Warfare
		ACA	Airspace control and deconfliction of aircraft and UAVs Air control measures
		AADC	NETF air defense TBMD
		C2WC	Information Warfare Sensor control
		RADC	CAP
		SCC	NETF surface and subsurface defense
		MIWC	Littoral maneuver

The amphibious assault would begin with UAV sorties to collect information and identify gaps for amphibious forces. After the LFC has determined where he wants his Light Company "teams" positioned, surface and airborne forces will "assault" through infiltration to those locationsto prepare for follow-on operations. Forces ashore, who maneuver to fire, will be able to call for precision indirect fires to strike critical nodes in the enemy defenses. Small teams will be difficult to target compared to the large forces that were vulnerable as the force beach head was established. The LFC will maintain

situational awareness as his forces pass critical information, such as BDA, to the command element through a network supported by sensors, aerostat balloons and UAVs. The LFC will be able to meter forces ashore based upon the situation. The AMWC is responsible for positioning the ARG to support the landing. Due to the burgeoning capabilities of anti-ship weapons, amphibious assaults will be conducted from over-the-horizon to protect the ARG. The AMWC can maneuver for deception, taking advantage of surprise. A preponderance of logistics will be coordinated from the ARG because the logistics footprint ashore will be significantly smaller. Light Companies, supported by MCSSDs, will be dispersed throughout the AOA and able to request supplies on an as needed basis in order to improve mobility. The AMWC will also provide a center for coordinating operations, capable of supporting the intelligence and communications requirements of the MEU(SOC). The ACC will integrate air assets not organic to the MEU(SOC). In addition to providing protection from enemy air forces, carrier aircraft will work with the teams on the ground to strike landing force targets. The ACA will coordinate with the AADC and the RADC to protect the NETF from an air threat while deconflicting manned and unmanned air assets. The C2WC will ensure connectivity and the flow of information throughout the NETF, keeping supporting commanders apprised of the landing force operation. The SCC and the MIWC will provide surface and subsurface protection for the NETF and amphibious landing forces transiting the littorals. The characteristic that ties this assault together is synergy. The resources of the NETF are supporting the landing force mission, while the LFC and the ARG retain the ability to maneuver.

Military Operations in Urban Terrain (MOUT)

As the world population increases near the littorals, there is an ever greater chance for MOUT. Urban areas create problems of their own due to the huge manpower expense that is necessary to keep these areas clear. The terrain in a built-up area provides the cover and concealment that makes these operations extremely costly in terms of presence and exposure. Engagements can be costly because urban warfare, by its nature, is close quarter combat. Additionally, the large number of civilians and non-combatants make it difficult to isolate the enemy and expose forces to terrorism. Sea Dragon forces will rely on UGVs and sensors to limit exposure and reduce manpower requirements. UGVs can be sent into places where forces may be unnecessarily placed at risk. Sensors can be used to monitor buildings, reducing the manpower requirements of occupation. In the future, the use of non-lethal weapons will allow engagement with the enemy while non-combatants are kept safe. If the enemy can be isolated, they can be engaged with precision guided munitions. Coordinating the actions of the NETF will enhance the protection of landing forces by establishing a three dimensional umbrella over the objective area.

Table 2. Proposed MOUT Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
MOUT	LFC	AMWC	Logistics/Maintenance Intelligence Command & Control Communications Medical
		ACC	Precision strike CAS FAC(A)/SAC(A) Electronic Warfare

Table 2 continued

Mission	Supported Cdr	Supporting Cdrs	Type of Support
		ACA	Airspace control and UAV deconfliction Air control measures Host Nation airport coordination
		AADC	NETF air defense TBMD
		C2WC	Information Warfare Sensor control
		RADC	CAP
		SCC	NETF surface and subsurface defense
		MIWC	Littoral maneuver

Forces in urban terrain will depend on UGVs, UAVs, and other sensors. Networking these assets will provide the LFC with the real-time information he will need to maintain situational awareness. Isolating the enemy, while limiting exposure, will be a demanding task. Light Companies will deploy with sensors to monitor portions of a city while other areas are being cleared. Every window, doorway, and rooftop has the potential to hide the enemy. Every corner can bring something new. Rules of engagement will be necessarily restrictive, and Sea Dragon forces will rely upon a combination of lethal and non-lethal weapons to diffuse crises that are bound to include both combatants and non-combatants. Again, the AMWC plays an important role housing the center for landing force operations, logistics and maintenance base, and integrating the actions of the other supporting commanders. Typically, Host Nation Support (HNS) is an important component of urban operations. While the ACC can isolate built-up areas, the ACA will have to work with the host country to deconflict NETF air operations. The C2WC will manage information and provide the links that focuses the other supporting commanders on the mission. The RADC, SCC, and the MIWC will have to coordinate the defense of

the NETF while providing freedom of maneuver. MOUT is a difficult mission, it is manpower intensive and dangerous. Forces employed as small teams, that are equipped and adept with technologically advanced systems, will be able to cover large areas of urban centers through the concerted efforts of the NETF.

Fire Support Coordination

Marines have traditionally relied upon fire support coordination to mass fires on an objective in order to close with and destroy the enemy. With the retirement on Navy battleships and self-propelled artillery, the coordination of indirect fires will play a greater role in land force operations. A principle tenet of developing the Sea Dragon Fires Targeting Functional Concept is achieving the capability to maneuver to facilitate engagement by fires. Where practical, fires can become the primary means of engagement rather than remaining strictly a supporting arm. Leveraging the means to acquire and engage targets at far greater distance is part of a package of techniques designed to expose enemy installations and units to precise indirect fires while limiting the exposure of friendly units. Because of this, substantial improvements in providing precise targeting and responsive, accurate fires are required. These techniques will greatly enhance and streamline the Fire Support Coordination (FSC) process. Vertical and horizontal FSC involving both supported and supporting commands will increase effectiveness, responsiveness and deconfliction of fires.

Table 3. Proposed FSC Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
Fire Support Coord.	LFC	AADC	NETF defense Defense of NSFS TBMD
		ACA	Airspace control & deconfliction of fire missions w/manned & unmanned aircraft Air control measures
		ACC	Strike CAS FAC(A) & SAC(A)
		AMWC	Naval maneuver C3I NSFS NGFL
		C2WC	Information warfare Sensor control
		RADC	CAP
		SCC	NETF surface and subsurface defense
		SOC	Intel Target acquisition & marking BDA

Marine forces ashore will be traveling lighter with a greater dependence upon non-organic indirect fires. Utilizing infiltration tactics, small teams will position themselves to acquire and designate targets that meet the LFC's intent. These teams will possess systems to communicate with the MEU(SOC) command element and fire support assets to direct fires on to targets in real-time. The AADC and the ACA will provide protection of the NETF and develop airspace coordination measures to deconflict air assets and naval surface fires. The ACC will provide CAS and airborne coordination of air and ground fire support assets. These aircraft will coordinate efforts with ground forces for close-in targets while striking deeper targets to shape the battlefield. The AMWC will continue to

furnish the landing force operations center and the supporting arms coordination center for the embarked MAGTF. As such, the command element will coordinate the actions of CAS aircraft and surface fires to support the mission. Networked with forces ashore, the LFC will be able to maintain situational awareness through assessment of fires from the teams and from UAVs. The C2WC will again monitor the links that provide the flow of information. The SCC and the RADC will coordinate actions to maintain a three dimensional umbrella over the NETF. This will ensure freedom of movement and allow surface combatants to maneuver to provide NSFS to forces ashore. The SOC will coordinate SOF assets to further enhance the capabilities of indirect fire systems.

GOPLAT Seizure/Destruction

The ability to successfully execute Gas and Oil Platform (GOPLAT) missions is one of the critical littoral requirements of the NETF. These platforms may threaten strategic lines of communication or Navy and Marine forces operating in a AOA. MEU(SOC) capabilities to perform this mission include transport and armed helicopters, and Marines trained in close quarters battle. Mission analysis is extremely important in determining which subordinate warfare commander is designated as the supported commander. If the mission is to destroy the platform, the ACC may be designated to strike the target with attack aircraft. If it is determined that the platform needs to be seized, the LFC will be assigned as the supported commander. The LFC, as the supported commander, offers the NETF commander the ability to takedown a platform or vessel without significant damage. Inherent MEU(SOC) capabilities to support GOPLAT seizures include NVG capable CH-46 transports and AH-1W Night Targeting System attack helicopters.

Table 4. Proposed GOPLAT Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
GOPLAT SEIZURE	LFC	AMWC	Naval maneuver Intelligence Command & Control Communications Medical Deception
		ACC	Strike CAS Reconnaissance Electronic Warfare
		ACA	Airspace control and deconfliction of aircraft and UAVs Air control measures
		C2WC	Sensor control
		RADC	CAP
		SCC	NETF surface and subsurface defense LF support

Gas and Oil Platforms can provide a viable threat to naval forces operating in the littorals, seizure of these assets provides the NETF with freedom of maneuver for follow-on missions. When seizing GOPLATs, the LFC will provide the forces to clear the platform. The AMWC will maneuver amphibious forces in preparation for the mission. UAVs will be utilized to determine defenses and weak points on the GOPLAT prior to employing forces. With the enhanced intelligence capability that UAVs provide, forces will deploy from over-the-horizon to gain surprise. Additionally, the AMWC will provide Search and Rescue assets for this maritime mission. The ACC and RADC will isolate the objective and the NETF from an enemy air threat. If the situation deteriorates, forces can withdraw and strike aircraft can destroy the GOPLAT. Typically, this is an aircraft intensive mission, and the ACA can develop airspace coordination measures to integrate

the actions of airborne assets. The SCC will provide RADAR equipped helicopters to coordinate an over-the-horizon heliborne attack on the objective. Providing vectors for assault forces and coordinating the movement of surface combatants will isolate the GOPLAT from surfaceborne reinforcements. Every element in the NETF brings a capability to this mission. Supporting the LFC will enable the landing force to focus on the threat on the GOPLAT.

Tactical Recovery of Aircraft and Personnel (TRAP)

The TRAP mission provides for the recovery of downed aircraft and/or personnel. This mission closely parallels the Navy's Combat Search and Rescue (CSAR) mission. The most important difference in these missions is that TRAP does not involve a search phase. The location of the aircraft or recovery personnel is known prior to executing the mission. Coordinated TRAP missions proved highly successful as seen in the dramatic 1995 rescue of USAF Capt Scott O'Grady in Bosnia. These missions include the integration of a highly capable rescue package consisting of a variety of aircraft and airborne assets. Technical improvements of Sea Dragon and the integration of NETF assets will further enhance the capabilities of future TRAP forces.

Table 5. Proposed TRAP Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
TRAP	LFC	AMWC	Naval maneuver Intelligence Command & Control Communications Medical

Table 5 continued

Mission	Supported Cdr	Supporting Cdrs	Type of Support
		ACC	RESCAP CSAR Command & Control Reconnaissance Electronic Warfare
		ACA	Airspace control and deconfliction of aircraft and UAVs Air control measures
		C2WC	Information Warfare Sensor control
		SCC	NETF surface and subsurface defense NSFS

The support of the carrier air wing is critical to any TRAP effort. NETF command and control doctrine allows the LFC, as the supported commander, to integrate his most capable systems. With small Marine teams establishing a perimeter on the objective, the ACC will provide the LFC with RESCAP, airborne command and control, and an electronic warfare capability. UAVs will conduct pre-execution reconnaissance and position locating while fighter and attack aircraft isolate the objective and protect the TRAP force during the recovery. The AMWC will support recovery force operations and provide medical support for recovered personnel. Due to the large number of airborne assets, the ACA will develop airspace coordination measures to integrate and deconflict aircraft and UAVs. The C2WC can aid the recovery effort by interpreting enemy electronic emissions with linguist support and controlling sensors. The SCC will coordinate the movement of surface combatants to protect the NETF. If the recovery location is near the shore, NSFS can play an important role in isolating the objective.

Non-combatant Evacuation Operations (NEO)

Non-Combatant Evacuation Operations (NEOs) are the extraction of U.S. civilians, personnel and equipment, and the extraction of non-U.S. personnel and equipment, not of the host country. These operations are categorized as either permissive, in which all parties agree to the extraction, or non-permissive, in which all parties have not agreed and opposition could interfere with the NEO, or hostile, in which some or all parties disagree on the extraction and attempts to interfere are expected. There can be a fine line between the definitions above and the realities on the ground. Therefore, it is critical that the MEU(SOC) be prepared for the transition from one environment to the next. Elements include a Forward Command Element (FCE), security force, an Evacuation Control Center (ECC), recovery force, medical support, and transportation of evacuees. The MEU(SOC) commander will gain advantage through many of the concepts and technologies described earlier such as reconnaissance, using UAVs to enhance his situational awareness and expand his influence, and sea-basing, which will keep the landing force's ground signature to a minimum.

Table 6. Proposed NEO Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
NEO	LFC	ACC	Recce CAS Interdiction
		AADC	Air Defense
		ACA	Airspace coordination
		AMWC	Transportation C4I Logistics Maintenance Medical
		C2WC	TEOB Monitor C2 structure OPSEC/PSYOPS
		RADC	CAP
		SCC	Lilypad NETF Defense NSFS Covert Recce
		SOC	Recce Language

The NETF Critical Tasks List A.1.8 identifies NEO as one of the many missions it must be prepared to perform. Commanders should plan for the worst-case scenario. The NEO force must be capable of protecting and extracting non-combatants as required, in any of the environments described above. NEO missions are not new to the MEU(SOC), Liberia and Somalia are recent examples. Intelligence is paramount, the LFC must understand the situation on the ground, i.e. the number of evacuees, the threat, and the objective area. Initial operations will include UAV reconnaissance of the objective and the FCE's coordination with the US Ambassador prior to the NEO. The C2WC will establish connectivity throughout the NETF to ensure each supporting commander is prepared to support the evacuation. The situation can be very dynamic and real-time intelligence will enable the NETF to adjust to changes on the ground. The AMWC will maneuver to

support the NEO, anticipating the influx of evacuees, processing evacuees on the ship and providing medical support. He will also arrange for other ships in the NETF to berth evacuees beyond his capability. In a non-permissive or hostile environment, the ACC will employ fixed wing aircraft to isolate the objective and provide additional time for the evacuation force. The RADC and the AADC will coordinate efforts to provide the NETF with protection from hostile air forces. In situations where the NETF must transit to the objective area, the SCC can coordinate "lilypad" operations so evacuation forces can reach the NEO site. This involves surging the faster ship of the CTG forward, and utilizing them as intermediate refueling stops enroute to the objective. Once on station, the SCC will establish measures to defend the NETF. SOF forces can accompany NEO forces, adding language skills and other reconnaissance and protection capabilities.

Humanitarian Assistance Operations

Humanitarian Assistance Operations will continue to be an expanding mission for the Navy and Marine Corps. These forward deployed forces are tasked to provide evacuation or relief from both natural and man-made disasters. These catastrophes include things like severe weather, earthquakes, volcanoes, environmental accidents, mass genocide, and country-wide starvation. Unfortunately, these are only a few examples, and MEU(SOC) forces must be prepared to provide assistance for any contingency.

Table 7. Proposed HA Organization

Mission	Supported Cdr	Supporting Cdrs	Type of Support
Humanitarian Assistance	LFC	ACA	Airspace coordination
		ACC	Recce Transportation
		AMWC	Transportation C4I Logistics Medical
		C2WC	Monitor C2 structure OPSEC/PSYOPS
		SCC	Lilypad Escort

Conducting humanitarian operations is also listed in A.1.8 of the NETF Critical Task List. It requires the forces to provide medical and dental services, minor construction to civilian facilities, temporary assistance to local governments, and assistance to counter the results or likely circumstances of natural or manmade disasters. Sea Dragon forces will utilize technology to assess the extent of the damage to tailor support to meet the needs of the disaster. For disasters ashore, the LFC will be the supported commander. While the CTG can assist with initial reconnaissance and transportation requirements, once the ARG is on station, there will be little else that the CTG can contribute to support the landing force. Humanitarian operations are manpower intensive. Landing forces will establish security while the LFC coordinates assistance efforts from assets within the MEU(SOC) and the ARG. Connectivity will streamline support efforts and will enhance the capabilities of Navy and Marine Corps forces.

Conclusion

We began this paper by describing the Navy and Marine Corps' vision for the 21st century in *Forward... From The Sea* and *Operational Maneuver From The Sea*. These landmark documents anticipate a post-cold war world characterized by threats that span the levels of conflict. To meet the needs of an evolving strategic environment, General Krulak, taking a lesson from General Lejeune's vision in the 1920s, established the Commandant's Warfighting Lab to institutionalize innovation in the Marine Corps. The CWL's mandate is to investigate emerging technologies and advanced operational concepts to stimulate evolutionary change in the tactics, techniques and procedures of the Fleet Marine Forces.

Sea Dragon was established, under the auspices of the CWL, as a vehicle to experiment with new force structures, technological applications, and operational concepts. Just as the Marine Corps Schools utilized a training battalion in 1927, a Special Purpose MAGTF was formed to evaluate the equipment, organizational structures and operations envisioned by the CWL. Sea Dragon forces are involved in a five year program involving a series of Advance Warfighting Experiments. These experiments will either validate, or invalidate, the proposed initiatives undergoing experimentation. The lessons gained from Sea Dragon will impact the future employment of embarked forces.

To overcome shortfalls in combined Carrier Task Group and Amphibious Ready Group operations, the Naval Doctrine Command recently drafted command and control doctrine for integrated naval forces. This proposed doctrine establishes the Amphibious Warfare Commander and the Landing Force Commander as equals to the traditional subordinate warfare commanders in the Carrier Task Group. This relationship affords the

ARG and the MEU(SOC) the latitude to coordinate the resources of the NETF in the accomplishment of the landing force mission while providing greater latitude to conduct operations autonomously. The USS Constellation Task Group and the USS Boxer Amphibious Ready Group are utilizing the proposal in support of the Sea Dragon AWEs and subsequent deployment to the western Pacific. The lessons learned from these trials will further the development of amphibious doctrine.

Finally, this paper recommended supporting and supported commander relationships based upon the proposed NETF command and control doctrine. These recommendations were provided in light of a hypothetical MEU(SOC) as it is now envisioned by the Commandant's Warfighting Lab. The Naval Doctrine Command and the Commandant's Warfighting Lab are on two paths that lead in the same direction. The simultaneous development of a reorganized Fleet Marine Force and a new NETF command and control structure will enable the Navy and Marine Corps to realize the common vision stated in FFTS and OMFTS. Marine forces rely on centralized command and decentralized execution based on the commander's intent. The technology, organizational structure and operational concepts proposed in Sea Dragon, coupled with the new emphasis on NETF command and control relationships, support these initiatives. Capitalizing on the successes that are identified in these ongoing developments will ensure that the Navy and Marine Corps team is prepared for the 21st century.

Glossary

AADC	Area Air Defense Commander
AAV	Assault Amphibian Vehicle
ACA	Airspace Control Authority
ACC	Air Combat Commander
ACE	Aviation Combat Element
ACSC	Air Command and Staff College
AMWC	Amphibious Warfare Commander
AOA	Amphibious Operations Area
ARG	Amphibious Ready Group
AWE	Advanced Warfighting Experiment
BDA	Bomb Damage Assessment
BLT	Battalion Landing Team
C2WC	Command and Control Warfare Commander
C4I	Command, Control, Communications,Computers and Intelligence
CAG	Carrier Air Group
CAS	Close Air Support
CCDG	Commander Cruiser Destroyer Group
CCG	Commander Carrier Group
CE	Command Element
CINC	Commander in Chief
COC	Combat Operations Center
CSAR	Combat Search and Rescue
CSS	Combat Service Support
CSSE	Combat Service Support Element
CTG	Carrier Task Group
CVBG	Carrier Battle Group
CWC	Composite Warfare Commander
CWL	Commandant's Warfighting Lab
DESRON	Destroyer Squadron
DOD	Department of Defense
ECC	Evacuation Control Center
FAC	Forward Air Controller

FCE	Forward Command Element
FFTS	Forward From The Sea
FSC	Fire Support Coordination
FST	Fire Support Team
FSV	Fire Support Vehicle
GCE	Ground Combat Element
GOPLAT	Gas and Oil Platform
GME	Ground Manuever Element
HA	Humanitarian Assistance
HMMWV	High Wheeled Multi-Wheeled Vehicle
HUD	Heads-up Display
IW	Information Warfare
JFAAC	Joint Forces Air Component Commander
JTF	Joint Task Force
JTFEX	Joint Task Force Exercise
LAV	Light Armored Vehicle
LCAC	Landing Craft Air Cushion
LFC	Landing Force Command
MAGTF	Marine Air Ground Task Force
MCAGCC	Marine Corps Air Ground Combat Center
MCCDC	Marine Corps Combat Development Element
MCSSD	Mobile Combat Service Support Detachment
MCTSSA	Marine Corps Tactical Systems Support Activity
MEF	Marine Expeditionary Force
METT-T	Mission, Enemy, Terrain and Weather, Troops and Fire Support, Time
MEU	Marine Expeditionary Unit
MEU(SOC)	Marine Expeditionary Unit (Special Operations Capable)
MIWC	Mine Warfare Commander
MOOTW	Military Operations Other Than War
MOUT	Military Operations in Urban Terrain
MRC	Major Regional Contingency
MSSG	MEU Service Support Group
NDC	Naval Doctrine Command
NEO	Non-combatant Evacuation Operation
NETF	Naval Expeditionary Task Force
NSFS	Naval Surface Fire Support
NVG	Night Vision Goggle

OPCON	Operational Control
OMFTS	Operational Maneuver From The Sea
OPSEC	Operational Security
OPTASK	Operational Task
OTC	Officer in Tactical Command
OTH	Over The Horizon
PSYOP	Psychological Operation
RMA	Revolution in Military Affairs
RESCAP	Rescue Combat Air Patrol
SAC	Supporting Arms Controller
SAG	Surface Action Group
SCC	Sea Combat Commander
SOC	Special Operations Coordinator
SPMAGTF	Special Purpose Marine Air Ground Task Force
STA	Surveillance and Target Acquisition
TBMD	Theater Ballistic Missile Defense
TEOB	Theater Electronic Order of Battle
T/O	Table of Organization
TRAP	Tactical Recovery of Aircraft and Personnel
UADS	Unmanned Aerial Delivery Systems
UAV	Unmanned Aerial Vehicle
UGV	Unmanned Ground Vehicle
USAF	United States Air Force

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